

Amendments to the Claims:

1. (Currently amended) A viscoelastic support structure with improved energy absorption comprising a frame, ~~at least one resilient filler layer~~, a flexible covering having a contact surface for contact with a user, a layer of a resilient filler interposed between the frame and the covering, at least one gel insert interposed between said covering and said frame, and a plurality of protuberances or recesses on at least one of said insert and said frame, said protuberances or recesses being aligned with respect to a mid-surface line extending at least partially along the length of said structure, wherein said insert comprises a bottom surface facing toward said frame and said frame comprises a top surface facing toward said insert, said protuberances or recesses being formed on one of said bottom surface of said insert or said top surface of said frame such that the insert directly interacts with the frame.

2. (Previously presented) A structure as claimed in claim 1, wherein said protuberances or recesses are provided on said bottom surface of said insert.

3. (Previously presented) A structure as claimed in claim 1, wherein said protuberances or recesses are provided on said top surface of said frame.

4. (Canceled)

5. (Previously presented) A structure as claimed in claim 1, wherein said protuberances have top surfaces mainly extending along respective first lines.

6. (Previously presented) A structure as claimed in claim 5, wherein said recesses have bottom surfaces mainly extending along respective second lines.

7. (Previously presented) A structure as claimed in claim 6, wherein said first and second lines are curved.

8. (Previously presented) A structure as claimed in claim 6, wherein said protuberances or recesses have inclined surfaces for connecting said top surfaces and said bottom surfaces, said inclined surfaces having inclination angles relative to said mid-surface line.

9. (Previously presented) A structure as claimed in claim 8, wherein said inclination angles are from 5° to 85°.

10. (Previously presented) A structure as claimed in claim 1, wherein said filler layer comprises an enlarged rear portion, a front horn portion, and a central portion, wherein at least one of said central portion and said rear portion comprise at least one through cavity.

11. (Previously presented) A structure as claimed in claim 10, wherein said at least one through cavity is present in said rear portion and is positioned in an area generally corresponding to the ischial bones of the user.

12. (Previously presented) A structure as claimed in claim 10, wherein said through cavity is present in at least one of said central portion and said rear portion, and said insert is received in said through cavity.

13. (Previously presented) A structure as claimed in claim 12, wherein said insert extends from said frame to said flexible covering.

14. (Previously presented) A structure as claimed in claim 1, wherein said gel insert comprises a gel material that is essentially optically transparent.

15. (Previously presented) A structure as claimed in claim 1, wherein said flexible covering comprises at least one essentially optically transparent portion.

16. (Previously presented) A structure as claimed in claim 15, wherein said transparent portion of said flexible covering is located above said insert.

17. (Previously presented) A structure as claimed in claim 15, wherein said transparent portion of said covering comprises a portion separate from said covering, said portion being connected to the rest of said flexible covering by suitable connection means.

18. (Previously presented) A structure as claimed in claim 15, wherein said transparent portion is integral with the rest of said flexible covering.

19. (Previously presented) A structure as claimed in claim 1, wherein said frame comprises a polymeric base material, that is essentially optically transparent.

20. (Previously presented) A structure as claimed in claim 19, wherein the base material comprises a ligneous, metal or composite material.

21. (Currently amended) A structure as claimed in claim 1, wherein said insert is adapted for deformation deforms in a direction transverse to the direction of a stress applied to said insert.

22. (Currently amended) A structure as claimed in claim 1, wherein said insert is adapted for deformation deforms in a direct essentially parallel to said mid-surface line.

23. (Previously presented) A structure as claimed in claim 1, wherein said insert is adapted for deformation deforms in one or more directions thereby increasing energy dissipation by said insert.

24. (Previously presented) A structure as claimed in claim 6, wherein said first and second lines are straight.

25. (Previously presented) A structure as claimed in claim 8, wherein said inclination angles are about 45°.

26. (Previously presented) A structure as claimed in claim 1, wherein said frame comprises at least one through hole covered by a polymeric layer that is essentially optically transparent.

27. (Previously presented) A structure as claimed in claim 1, wherein said direct interaction between said insert and said frame comprises deformation of the insert, said deformation having at least one component parallel to the direction of applied stress and at least one component transverse to the direction of the applied stress.

28. (New) A structure as claimed in claim 1, wherein the said layer of said resilient filler includes a rear portion, a central portion, and a front horn portion.

29. (New) A structure as claimed in claim 28, further comprising a through cavity formed on said rear portion or said central portion.

30. (New) A viscoelastic support structure with improved energy absorption comprising:

a frame;

a flexible covering having a contact surface for contact with a user;

a layer of a resilient filler interposed between said frame and said covering and having a through cavity;

at least one gel insert interposed between said covering and said frame in said through cavity of said resilient filler layer; and

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Reply to Office Action of July 16, 2008

Page 6

a plurality of protuberances or recesses on at least one of said insert and said frame, said protuberances or recesses being aligned with respect to a mid-surface line extending at least partially along the length of said structure, wherein said insert comprises a bottom surface facing toward said frame and said frame comprises a top surface facing toward said insert, said protuberances or recesses being formed on one of said bottom surface of said insert or said top surface of said frame such that the insert directly interacts with the frame.